

REMARKS

Claims 1-39 are pending in the present application. Claims 1-3, 13-15, 25-36, and 39 are amended. Support for the amendments to the claims, particularly claims 1, 13, and 25, may be found at least on page 15, lines 11-22, of the specification, as well as originally filed claims 2, 14, and 26. Reconsideration of the claims is respectfully requested.

I. Examiner Interview

Applicants thank the Examiner for the courtesies extended in the telephone interview on June 29, 2005. During the telephone interview, the Examiner stated that the proposed amendment to claim 1, as effectuated above, would overcome the current rejections.

II. 35 U.S.C. § 112, Second Paragraph

The Office Action rejects claims 2, 4-10, 14, 16-24, 26, 28-36, and 39 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which applicants regard as the invention. Claims 1, 13, and 25 are amended to provide antecedent basis for the phrase "the socket structure." Therefore, Applicants respectfully request withdrawal of the rejection of claims 2, 4-10, 14, 16-24, 26, 28-36, and 39 under 35 U.S.C. § 112, second paragraph.

III. 35 U.S.C. § 103, Obviousness

The Office Action rejects claims 1, 2, 13, 14, 25, 26, 37, and 38 under 35 U.S.C. § 103(a) as being unpatentable over *Hausman et al.* (U.S. Patent No. 5,872,920), and further in view of *Hall* ("Beej's Guide to Network Programming Using Internet Sockets"). This rejection is respectfully traversed.

Hausman teaches a programmed Ethernet adapter with early interrupts for accelerating data transfer. *Hausman* states:

Overview of operation

All data transfer operations between adapter 10 and the host are performed preferably through programmed I/O (PIO), except that a direct memory access (DMA) mode is available as a backup for receive operations. Data is stored by

the adapter as double words (4 bytes). As a data packet is received, it is copied into receive FIFO 170. An early receive threshold size is established so that any packet larger than a preselected size triggers the early receive interrupt. If adapter 10 is not provided with or programmed for early receive interrupts, or if the packet is smaller than the early receive threshold size, adapter 10 will wait until the entire packet has been received and then generate an interrupt indicating that a complete packet has been received, that is, a receive complete interrupt, to signal a driver that a complete packet is available for reading. If adapter 10 is provided with or programmed for early interrupts at a particular early receive threshold, an early receive interrupt will be generated once that number of bytes have been received. The driver may then begin reading the data, or for long packets may reprogram the early receive threshold to generate another early receive interrupt once more of the packet has been received.

Hausman, col. 3, lines 1-23. Thus, *Hausman* teaches that a driver may program a network adapter with an early receive threshold so that the driver may be interrupted early and often to read data for long packets.

In contradistinction, the present invention provides a manner in which a user associated with a logical port initiates a bulk read with an associated bulk read size. As data is received into a socket read buffer associated with the logical port, the present invention determines if an amount of data in the socket receive buffer is equal to or greater than the bulk read size. The present invention activates the bulk read only when there is an amount of data in the socket receive buffer equal to or greater than the bulk read size.

The Office Action acknowledges that *Hausman* fails to disclose a socket. In fact, the word "socket" does not appear anywhere in the *Hausman* reference, because *Hausman* is concerned with accelerating data transfer in a network adapter, not with performing a bulk read from a socket buffer. While *Hausman* generally teaches reading data from a buffer, *Hausman* does not teach any of the specific features recited in the claims. More specifically, *Hausman* does not teach or fairly suggest a user associated with a logical port initiating a bulk read with an associated bulk read size, as data is received into a socket read buffer associated with the logical port, determining if an amount of data in the socket receive buffer is equal to or greater than the bulk read size, and activates the bulk read only when there is an amount of data in the socket receive buffer equal to or greater than the bulk

read size, as recited in claim 1, for example. In other words, *Hausman* is only remotely relevant to the presently claimed invention, but cannot be used as a primary basis for rejecting the claims.

The Office Action addresses the significant deficiencies of *Hausman* by taking Official Notice that the claim features are well known and citing *Hall* as generally teaching sockets. Applicants respectfully traverse the Official Notice, because none of the cited references or any other prior art references teach or suggest the claim features. More particularly, *Hall* also fails to teach the features of the presently claimed invention. The present invention, as recited in claim 1, for example, addresses a problem associated with bulk reads from a socket buffer. That is, when a user, such as an application associated with a logical port, initiates a bulk read, the transmission control protocol (TCP) layer must wake (activate) the receive function each time data is received into the socket buffer. To solve this problem, the invention recited in claim 1, for example, stores a bulk read size in the socket structure and activates the bulk read function only when there is an amount of data in the socket receive buffer equal to or greater than the bulk read size. Neither *Hausman* nor *Hall* teaches or suggests this combination of features. *Hausman* actually teaches away from the presently claimed invention, because *Hausman* teaches using interrupts to "wake" the device driver more frequently to read data from a receive buffer. *Hall* merely teaches a simple receive function with no specific bulk read functionality. Hence, even assuming, *arguendo*, a person of ordinary skill in the art would have been motivated to combine *Hausman* and *Hall*, the proposed combination would not result in the presently claimed invention.

Furthermore, claim 1, 13, and 25 are amended to include the limitations originally presented in claims 2, 14, and 26. With respect to claims 2, 14, and 26, the Office Action alleges that *Hall* teaches that programmers may modify a generic socket structure with fields to adapt to additional parts of an Internet address. *Hall* does indeed appear to provide a general teaching of a socket structure. However, in no way whatsoever does *Hall* suggest that a socket structure may be used to store a bulk read size for a bulk read. The mere fact that a prior art reference can be readily modified does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Laskowski*, 871 F.2d 115, 10 U.S.P.Q.2d 1397 (Fed. Cir. 1989); *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780

(Fed. Cir. 1992); and, *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1993). For example, the BASIC programming language can be used to implement the functions of many software inventions; however, whether it would have been obvious to a person of ordinary skill in the art to implement the functions is another issue altogether. The Office Action may not merely state that the modification would have been obvious to one of ordinary skill in the art without pointing out in the prior art a suggestion of the desirability of the proposed modification.

For the above reasons, the proposed combination of *Hausman* and *Hall* does not render claim 1 obvious. Independent claims 13 and 25 recite subject matter addressed above with respect to claim 1 and are allowable for similar reasons. Because claims 2, 14, 37, and 38 depend on claims 1, 13, and 25, the same distinctions between *Hausman* and *Hall* and the invention recited in claims 1, 13, and 25 apply for these claims. Claims 2, 14, 37, and 38 recite additional combinations of features not taught or suggested by the applied references.

More particularly, with respect to claims 37 and 38, the Office Action alleges that *Hausman* teaches placing the bulk read function in an inactive state if an amount of data in the socket receive buffer is not equal to or greater than the bulk read size at Fig. 5, 520 ("where if threshold is not met, a DMA is not performed"). Applicants respectfully disagree. As acknowledged in the Office Action, *Hausman* makes no mention whatsoever of a socket or a socket receive buffer. Therefore, *Hausman* cannot teach the specific features of claims 37 and 38. Furthermore, the cited portion of *Hausman* teaches that in a direct memory access (DMA) mode, when the amount of data in a receive buffer reaches a DMA threshold, data is copied from the receive buffer to a DMA buffer in host computer memory. See *Hausman*, col. 3, lines 24-33. Therefore, the DMA threshold is not a bulk read buffer size as claimed, but a threshold that triggers DMA backup.

Therefore, the rejection of claims 1, 2, 13, 14, 25, 26, 37, and 38 under 35 U.S.C. § 103(a) has been overcome.

The Office Action rejects claims 3, 15, and 27 under 35 U.S.C. § 103(a) as being unpatentable over *Hausman* in view of *Hall* as applied to claims 1, 13, and 25 above, and further in view of *Baughner et al.* (U.S. Patent No. 5,819,043). This rejection is respectfully traversed.

Because claims 3, 15, and 27 depend on claims 1, 13, and 25, the same distinctions between *Hausman* and *Hall* and the invention recited in claims 1, 13, and 25 apply for these claims. Claims 3, 15, and 27 recite additional combinations of features not taught or suggested by the applied references. The Office Action further acknowledges that *Hausman* and *Hall* fail to teach or suggest that the bulk read size is identified by a user. The Office Action addresses this deficiency by taking Official Notice that the claim features are well known and citing *Baughner* as teaching this feature. Applicants respectfully traverse the Official Notice. While a user identifying a value may be generally well known, such a teaching cannot be combined with *Hausman* and *Hall* to reach the presently claimed invention, unless *Hausman* and *Hall* suggest that such a feature would be desirable. To the contrary, *Hausman* makes no mention whatsoever of a socket or a socket receive buffer or a bulk read. *Hall* teaches a socket and a socket structure, but makes no mention of a bulk read or a bulk read size. Therefore, given the teachings of *Hausman* and *Hall* and a general knowledge that users can identify values, a person of ordinary skill in the art would still not have found the present invention obvious.

Baughner is concerned with reserving system or network resources to high bandwidth traffic. *Baughner* states:

Thus, whatever means is devised to automatically reserve system or network resources to high bandwidth traffic is likely to be nonoptimal, particularly as new technologies and multimedia file types evolve. Too much multimedia traffic for the reserved resources will result in overutilization causing glitches or jitter in the multimedia sessions. If too much resource is reserved for multimedia traffic to solve the problem above, normal data traffic will be prevented from transmission. The applicants have recognized a need to adjust the allocation of resources devoted to a multimedia session. Further, because a human being is the most adaptable control means yet devised, the applicants propose a user interface operable by the network administrator or other system user. The interface allows one to adjust a default or calculated maximum resource reservation value to a new value to better optimize performance.

Baughner, col. 3, lines 1-16. Thus, *Baughner* merely teaches a graphical user interface through which a human user can adjust resource reservation to optimize performance.

However, *Baughner* does not suggest that a human user could somehow identify a bulk read size, particularly as recited, in combination, in claims 3, 15, and 27.

The combination of *Hausman*, *Hall*, and *Baughner* does not render claims 3, 15, and 27 obvious. Therefore, Applicants respectfully request withdrawal of the rejection of claims 3, 15, and 27 under 35 U.S.C. § 103(a).

The Office Action rejects claims 4-6, 16-18, 28-30, and 39 under 35 U.S.C. § 103(a) as being unpatentable over *Hausman* in view of *Hall* as applied to claims 1, 13, and 25 above, and further in view of *Spilo* (U.S. Patent No. 6,182,165; Jan. 30, 2001). This rejection is respectfully traversed.

Because claims 4-6, 16-18, 28-30, and 39 depend on claims 1, 13, and 25, the same distinctions between *Hausman* and *Hall* and the invention recited in claims 1, 13, and 25 apply for these claims. Claims 4-6, 16-18, 28-30, and 39 recite additional combinations of features not taught or suggested by the applied references. The Office Action further acknowledges that *Hausman* and *Hall* fail to teach or suggest that the bulk read is activated only when there is an amount of data in the socket receive buffer equal to or greater than the bulk read size in response to setting of a flag in the socket structure. Again, the Office Action addresses this deficiency by taking Official Notice that the claim features are well known. Applicants once again traverse the Official Notice. The Office Action appears to address each feature from the claims not found in the prior art by dismissing the inventive feature as being "well known."

The Office Action also cites *Spilo* as teaching performing a DMA access in response to setting of a flag. The Office Action further states that the claimed invention would have been obvious to allow a DMA access in order to distinguish ownership of a buffer between the DMA controller and the software. It is unclear what, if anything, this has to do with the claimed invention. Claims 4, 16, and 28 are not concerned with distinguishing ownership of a buffer or with a DMA controller. Rather, claims 4, 16, and 28 recite activating a bulk read only when there is an amount of data in the socket receive buffer equal to or greater than the bulk read size in response to setting of a flag in the socket structure. None of the applied references teaches or suggests these features. *Spilo*, like *Hausman*, does not even include the word "socket" anywhere in the disclosure. As stated above, *Hall* only nominally

mentions sockets and socket structures. Therefore, all three references are lacking, and even if one were motivated to combine the three disparate teachings, the combination would not result in the claimed invention.

Claim 39 recites subject matter addressed above with respect to claims 37 and 38 and are allowable for similar reasons.

Therefore, Applicants respectfully request withdrawal of the rejection of claims 4-6, 16-18, 28-30, and 39 under 35 U.S.C. § 103(a).

The Office Action rejects claims 7-10, 19-24, and 31-36 under 35 U.S.C. § 103(a) as being unpatentable over *Hausman* in view of *Hall* in view of *Spilo* as applied to claims 1, 6, 16, 18, 29, and 30 above, and further in view of *Lindsay* (U.S. Patent No. 6,564,267). This rejection is respectfully traversed.

Because claims 7-10, 19-24, and 31-36 depend on claims 1, 4-6, 13, 16-18, 25, and 28-30, the same distinctions between *Hausman*, *Hall*, and *Spilo* and the invention recited in claims 1, 4-6, 13, 16-18, 25, and 28-30 apply for these claims. Claims 7-10, 19-24, and 31-36 recite additional combinations of features not taught or suggested by the applied references.

Lindsay does indeed appear to teach allowing a host to send large block transfers in a TCP connection by recognizing the limitations of the endpoint, breaking a large transfer into multiple smaller transfers, and reconstructing the smaller transfers into a large bulk transfer on the receiving end. See *Lindsay*, col. 4, lines 6-33. *Lindsay*, like *Hausman* and *Spilo*, makes no mention whatsoever of the word "socket." As such, the four applied references, taken individually or in combination, fail to teach or suggest creating a socket structure for a socket associated with a logical port, wherein the socket structure contains a socket receive buffer, initiating, by a user associated with the logical port, a bulk read function having a bulk read size, storing the bulk read size in a field in the socket structure, determining if an amount of data in the socket receive buffer is equal to or greater than the bulk read size, and activating the bulk read function only when there is an amount of data in the socket receive buffer equal to or greater than the bulk read size, as recited in claim 1, for example. It follows that *Hausman*, *Hall*, *Spilo*, and

Lindsay cannot be combined to recreate the further limitations in claims 7-10, 19-24, and 31-36.

Therefore, the rejection of claims 7-10, 19-24, and 31-36 under 35 U.S.C. § 103(a) has been overcome.

The Office Action rejects claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over *Hausman* in view of *Hall* as applied to claim 1 above, and further in view of *Lindsay*. This rejection is respectfully traversed.

Claims 11 and 12 are improperly rejected. These claims depend from claim 4, which is not also rejected under *Hausman* in view of *Hall*. To the contrary, the Office Action acknowledges that *Hausman* and *Hall* are insufficient to reject claim 4 and relies on *Spilo* as teaching the missing limitations. Therefore, it follows that claims 11 and 12 must also be rejected as being allegedly unpatentable over *Hausman* in view of *Hall* and *Spilo*.

The Office Action relies on *Lindsay* as teaching copying an amount of data equal to the bulk read size from the socket receive buffer to an application buffer, because "sending full sized packets to buffer memory until all the data is sent is considered amount of data equal to the bulk read size." Applicants respectfully disagree. *Lindsay* does not even contemplate a socket or a socket structure that contains a socket receive buffer. It follows that *Lindsay* cannot possibly teach the further limitation of copying data from the socket receive buffer to an application buffer and resetting a flag, which is also contained within the socket structure. *Hausman*, *Hall*, and *Lindsay*, taken alone or in combination, fail to teach or suggest each and every claim limitation. Thus, the proposed combination of *Hausman*, *Hall*, and *Lindsay* do not render claims 11 and 12 obvious.

Therefore, Applicants respectfully request withdrawal of the rejection of claims 11 and 12 under 35 U.S.C. § 103(a).


IV. Conclusion

It is respectfully urged that the subject application is patentable over the prior art of record and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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